| GEARTECH                                                | CHECKLIST  |          |   |        | No. CK8800 |          | SHEET 1 OF 3 |  |
|---------------------------------------------------------|------------|----------|---|--------|------------|----------|--------------|--|
| CLARTEON                                                |            |          |   |        | Rev. A     |          |              |  |
| Gearbox Test                                            |            |          |   |        | BY RLE     |          | DATE 7/05/98 |  |
|                                                         |            |          |   |        | CKD JRM    |          | DATE 7/05/98 |  |
| TEST PLAN                                               |            |          |   |        |            |          |              |  |
| Question                                                | Υ          | N        | R |        |            | Comments |              |  |
| Is there a written test plan?                           |            |          |   |        |            |          |              |  |
| Does test plan specify prope                            | r          |          |   |        |            |          |              |  |
| loads, speeds, & runtimes?                              |            |          |   |        |            |          |              |  |
| Does test plan specify sound test per ANSI/AGMA 6025?   | t          |          |   |        |            |          |              |  |
| Does test plan specify vibration test per ANSI/AGM      | ۸          |          |   |        |            |          |              |  |
| 6000?                                                   |            |          |   |        |            |          |              |  |
| Does test plan specify record of bearing temperatures?  | ds         |          |   |        |            |          |              |  |
| Does test plan specify record of oil temperatures?      | ds         |          |   |        |            |          |              |  |
| Does test plan specify record                           | de         |          |   |        |            |          |              |  |
| of contact patterns?                                    | 45         |          |   |        |            |          |              |  |
|                                                         | l l        | I.       |   | HOUSEI | KEEPING    |          |              |  |
| Question                                                | ΤΥ         | N        | R |        |            | Comments |              |  |
| Are all gearbox and lube                                |            |          |   |        |            |          |              |  |
| system ports closed?                                    |            |          |   |        |            |          |              |  |
| Are oil drum ports closed?                              |            |          |   |        |            |          |              |  |
| Are oil drum tops clean?                                |            |          |   |        |            |          |              |  |
| Take oil samples from drums                             | s?         |          |   |        |            |          |              |  |
| Is oil transfer pump flushed                            |            |          |   |        |            |          |              |  |
| with clean oil?  Is area around gearbox clea            | n2         |          |   |        |            |          |              |  |
| Is gearbox free of debris, too                          |            |          |   |        |            |          |              |  |
| rags, and unnecessary                                   | ,,,,       |          |   |        |            |          |              |  |
| hardware?                                               |            |          |   |        |            |          |              |  |
| Are gearbox breathers                                   |            |          |   |        |            |          |              |  |
| installed?                                              |            |          |   |        |            |          |              |  |
| When opening ports are the                              | .          |          |   |        |            |          |              |  |
| following precautions follows                           | ea:        |          |   |        |            |          |              |  |
| Open ports one at a time?  Clean inspection cover & are | 22         |          |   |        |            |          |              |  |
| around port before opening?                             |            |          |   |        |            |          |              |  |
| Count inspection cover bolts                            |            |          |   |        |            |          |              |  |
| before opening?                                         |            |          |   |        |            |          |              |  |
| Keep inspection cover bolts                             | in         |          |   |        |            |          |              |  |
| separate containers?                                    |            |          |   |        |            |          |              |  |
| Technicians have nothing in shirt pockets?              |            |          |   |        |            |          |              |  |
| Flashlights & tools on                                  |            |          |   |        |            |          |              |  |
| lanyards?                                               |            |          |   |        |            |          |              |  |
| Ports closed immediately aft                            | er         |          |   |        |            |          |              |  |
| inspection?                                             |            | L        | L |        |            |          |              |  |
| All inspection cover bolts                              |            |          |   |        |            |          |              |  |
| accounted for?                                          |            | <u> </u> |   | 0)(0== | MAGUEOVA   |          |              |  |
|                                                         | 1          |          |   | SYSIE  | M CHECKOUT | 0        |              |  |
| Question                                                | Y          | N        | R |        |            | Comments |              |  |
| Lube system components pe<br>Bill of Material?          | <b>3</b> 1 |          |   |        |            |          |              |  |
| Lube system plumbed per                                 |            |          |   |        |            |          |              |  |
| lubrication schematic?                                  |            | <u>L</u> |   |        |            |          |              |  |

| GEARTECH                        | CHECKLIST |    |     |        | No. CK8800  |          | SHEET 2 OF 3 |
|---------------------------------|-----------|----|-----|--------|-------------|----------|--------------|
| GLARILOII                       |           |    |     |        | Rev. A      |          |              |
| Gearbox Test                    |           |    |     |        | BY RLE      |          | DATE 7/05/98 |
| Courses rest                    |           |    |     |        | CKD JRM     |          | DATE 7/05/98 |
| Question                        | Υ         | N  | R   |        | CKD JKIVI   | Comments |              |
| Lube system connections         | ı         | IN | К   |        |             | Comments |              |
| properly bolted?                |           |    |     |        |             |          |              |
| Lube system electrical          |           |    |     |        |             |          |              |
| connections properly made?      |           |    |     |        |             |          |              |
| Oil type correct?               |           |    |     |        |             |          |              |
| Oil level correct?              |           |    |     |        |             |          |              |
| Oil filter correct?             |           |    |     |        |             |          |              |
| Oil filter 3-way valve set so   |           |    |     |        |             |          |              |
| filters are operational?        |           |    |     |        |             |          |              |
| Magnetic trap 3-way valve se    | ot .      |    |     |        |             |          |              |
| so trap is operational?         |           |    |     |        |             |          |              |
| Is magnetic trap clean?         |           |    |     |        |             |          |              |
| io magnetto trap cream.         |           |    | 11  | IRE SY | STEM TEST   |          |              |
| Question                        | ΙΥ        | N  | R   | DL OI  | JILIVI ILOI | Comments |              |
| Jog pump motor. Rotation        | I         | IN | - 1 |        |             | Comments |              |
| correct?                        |           |    |     |        |             |          |              |
| Run lube system w/o rotating    | ,         |    |     |        |             |          |              |
| gearbox and check following     |           |    |     |        |             |          |              |
| Pump motor quiet?               | •         |    |     |        |             |          |              |
| Oil pump quiet?                 |           |    |     |        |             |          |              |
| Leaks in piping, housing, or o  | oil       |    |     |        |             |          |              |
| seals?                          | JII       |    |     |        |             |          |              |
| System oil pressures per        |           |    |     |        |             |          |              |
| specification?                  |           |    |     |        |             |          |              |
| Filter differential pressure pe | r         |    |     |        |             |          |              |
| specification?                  | "         |    |     |        |             |          |              |
| Oil level correct?              |           |    |     |        |             |          |              |
| Open inspection ports (see      |           |    |     |        |             |          |              |
| housekeeping). Oil flow         |           |    |     |        |             |          |              |
| correct?                        |           |    |     |        |             |          |              |
|                                 |           |    | GF  | ARBOX  | SPIN TEST   |          |              |
| Question                        | ΤΥ        | N  | R   |        |             | Comments |              |
| Jog drive motors. Rotation      |           |    |     |        |             |          |              |
| correct?                        |           |    |     |        |             |          |              |
| Run lube for 15 min before      |           |    |     |        |             |          |              |
| rotating gearbox?               |           |    |     |        |             |          |              |
| Shutdown and check magne        | tic       |    |     |        |             |          |              |
| trap. Magnetic trap clean?      |           |    |     |        |             |          |              |
| Start gearbox rotation and se   | et        |    |     |        |             |          |              |
| speed to specification?         |           |    |     |        |             |          |              |
| Record lube pressures, filter   |           |    |     |        |             |          |              |
| differential pressure, and oil  |           |    |     |        |             |          |              |
| temperatures every 15 min.?     | )         |    |     |        |             |          |              |
| Run (2 hours minimum) until     |           |    |     |        |             |          |              |
| oil temperatures stabilize?     |           | 1  |     |        |             |          |              |
| Leaks in piping, housing, or o  | lic       |    |     |        |             |          |              |
| seals?                          |           |    |     |        |             |          |              |
| Record sound per                |           | 1  |     |        |             |          |              |
| ANSI/AGMA 6025?                 |           | 1  |     |        |             |          |              |
| Record vibration per            |           | 1  |     |        |             |          |              |
| ANSI/AGMA 6000?                 |           | 1  |     |        |             |          |              |
| Internal accelerometers         |           | 1  |     |        |             |          |              |
| operational?                    | l         | 1  | İ   |        |             |          |              |

| GEARTECH                                             | CHECKLIST |   |     |        | No. CK8800  |          | SHEET 3 OF 3 |
|------------------------------------------------------|-----------|---|-----|--------|-------------|----------|--------------|
| GLANILOII                                            |           |   |     |        | Rev. A      |          |              |
| Gearbox Test                                         |           |   |     |        | BY RLE      |          | DATE 7/05/98 |
|                                                      |           |   |     |        | CKD JRM     |          | DATE 7/05/98 |
| Question                                             | Y         | N | R   |        |             | Comments |              |
| Check oil pressure switch se                         | t         |   |     |        |             |          |              |
| points?                                              |           |   |     |        |             |          |              |
| Check oil temperature switch                         | 1         |   |     |        |             |          |              |
| set points?                                          | -0        |   |     |        |             |          |              |
| Take oil sample from petcocl                         | (?        |   |     | T TEOT | INIODEOTION |          |              |
|                                                      |           | 1 | POS | ILEST  | INSPECTION  |          |              |
| Shutdown and check magne                             | tic       |   |     |        |             |          |              |
| trap. Magnetic trap clean?                           |           |   |     |        |             |          |              |
| Open inspection ports (see                           |           |   |     |        |             |          |              |
| housekeeping). Internals clean and free of distress? |           |   |     |        |             |          |              |
| Open inspection ports (see                           |           |   |     |        |             |          |              |
| housekeeping). Contact                               |           |   |     |        |             |          |              |
| patterns per procurement                             |           |   |     |        |             |          |              |
| specification?                                       |           |   |     |        |             |          |              |
| Record contact patterns?                             |           |   |     |        |             |          |              |
| Close all inspection ports and                       | 4         |   |     |        |             |          |              |
| prepare for shipping?                                | ۱         |   |     |        |             |          |              |
| prepare for simpping:                                |           |   |     | TEST   | REPORT      |          |              |
| Question                                             | Υ         | N | R   | 12011  |             | Comments |              |
| Does test report record the                          |           |   |     |        |             |          |              |
| following:                                           |           |   |     |        |             |          |              |
| Inspectors name?                                     |           |   |     |        |             |          |              |
| Date?                                                |           |   |     |        |             |          |              |
| Gearbox serial number?                               |           |   |     |        |             |          |              |
| Loads, speeds, & runtimes?                           |           |   |     |        |             |          |              |
| Oil type?                                            |           |   |     |        |             |          |              |
| Sound per ANSI/AGMA 6025                             | 5?        |   |     |        |             |          |              |
| Vibration per ANSI/AGMA                              |           |   |     |        |             |          |              |
| 6000?                                                |           |   |     |        |             |          |              |
| Bearing temperatures?                                |           |   |     |        |             |          |              |
| Oil temperatures?                                    |           |   |     |        |             |          |              |
| Contact patterns per                                 |           |   |     |        |             |          |              |
| procurement specification?                           |           |   |     |        |             |          |              |
| Certification that test data                         |           |   |     |        |             |          |              |
| conform to requirements of                           |           |   |     |        |             |          |              |
| procurement specification?                           |           |   |     | 1      |             |          |              |